ABSTRACT

Processes for oxidative dehydrogenation of alkane to one or more olefins, exemplified by ethane to ethylene, are disclosed using novel catalysts. The catalysts comprise a mixture of metal oxides having as an important component nickel oxide (NiO), which give high conversion and selectivity in the process. For example, the catalyst can be used to make ethylene by contacting it with a gas mixture containing ethane and oxygen. The gas mixture may optionally contain ethylene, an inert diluent such as nitrogen, or both ethylene and an inert diluent.